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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/664,822

Filing Date: September 16, 2003

Appellant(s): DRAKE ET AL.

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Denis G. Maloney  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 6/29/09 appealing from the Office action mailed 6/4/09.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,069,793	Kaschemekat et al.	12-1991
6,207,369	Wohlstadter et al.	3-2001

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 11-23 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The location and orientation of the composite membrane within the housing is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). As recited claim 11 only recites that the composite membrane resides in the housing but does not recite any specific location or orientation within the housing. In the appeal brief filed 4/13/09 in the Summary of Claimed Subject Matter applicants show the criticality of the location and orientation of the multilayer membrane specifically with regards to the embodiment illustrated in Figure 2B, which is described as being the representative embodiment recited in the claims. Currently there is no recitation in any of claims 11-23 that clearly depicts the specific location and orientation of the composite membranes as illustrated in the embodiment of Figure 2B. As currently recited the composite membrane can be located and oriented anywhere within the fuel cartridge, including but not limited to covering the fuel egress port and if the composite membrane does cover the fuel egress port than the instantly claimed invention cannot and will not function because of the methanol-impermeable layer of the composite membrane that will prevent the methanol from permeating out of the fuel cartridge.

Claims 11-23 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 11-23 fail(s) to correspond in scope with that which applicant(s) regard as the

invention can be found in the reply filed 4/13/09. In that paper, applicant has stated that figure 2B represents the embodiment that is recited in the above listed claims, and this statement indicates that the invention is different from what is defined in the claim(s) because claim 11 only recites that the composite membrane resides in the housing but does not recite any specific location or orientation within the housing.

Claims 11-23 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: specific location and orientation of the composite membrane within the fuel cartridge housing.

Claims 24-30, 32 and 33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent No. 5,069,793 hereinafter Kaschemekat.

Kaschemekat teaches a spirally wound multi layer composite membrane comprising a porous substrate (i.e. web), a membrane disposed on a first surface of the substrate (i.e. microporous substrate membrane) and a coating that is a permselective polymer on the other surface of the substrate and said multi layer composite membrane can be a plurality of membranes (column 1, lines 11-52, column 10, lines 33-64 and example 1). Kaschemekat further teaches that the permselective polymer coating is chosen for their specific selectivity. It is submitted that due to the breadth of the recitation in claims 28 and 33 of "other analogous polymers or composites", the polyester support web falls within said genus and the burden is shifted to applicants to

prove in the form of evidence otherwise. It is also submitted that due to the breadth of the recitation in claims 29 and 33 of "polyurethanes" and "polymeric composition and composites" the asymmetric Loeb-Sourirajan type membrane falls within said genus and the burden is shifted to applicants to prove in the form of evidence otherwise. It is further submitted that due to the breadth of the recitation in claims 32 and 33 of "polymer/inorganic composite" or "other methanol-impermeable material" at least polysilicone-carbonate copolymers and fluoroelastomers fall within said genus' as well as other listed materials found in the Markush group in column 10 of Kaschemekat and the burden is shifted to applicants to prove in the form of evidence otherwise.

In the alternative it would have been obvious to one having ordinary skill in the art to select the permselective polymer coating based on its specific selectivity since there are a finite number of identified, predictable solutions identified in Kaschemekat and Kaschemekat specifically teaches that the permselective polymer coating is chosen based on its specific selectivity. See MPEP 2141 (III) Rationale E, KSR v. Teleflex (Supreme Court 2007).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaschemekat as applied to claim 24 above, and further in view of U.S. Patent No. 6,207,369 hereinafter Wohlstadter.

Kaschemekat does not teach that the membrane is a sintered metal coated with a polymer.

Wohlstadter teaches that filters may comprise sintered metals coated with polymer membranes (column 70, line 66 – column 71, line 4).

At the time of the invention it would have been obvious to one having ordinary skill in the art to include a sintered metal coated with a polymer as the membrane for Kaschemekat as taught by Wohlstadter in order to increase the overall rigidity of the composite membrane thus making it more durable and also since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

**(10) Response to Argument**

Before addressing appellants arguments regarding the rejection under 35 U.S.C. 112, first paragraph, the Examiner will address the rejection under 35 U.S.C. 112, second paragraph because the discussion of indefiniteness is also pertinent to the discussion of enablement.

Claim 11 recites in line 5 of the claim “a composite membrane residing in the housing of the fuel cartridge”. The Examiner would like to focus on the word “residing”. It is the duty of an Examiner when examining claims to give the claims their broadest most reasonable interpretation in light of the supporting disclosure. Looking at the specification there is nothing provided that changes the plain meaning of the word “residing” so therefore the plain meaning of the word is used. By definition “residing” means that the membrane is present or exists in a given space, and defined by the claim the space is the fuel cartridge housing. Therefore given the broadest most reasonable interpretation of the above recitation, the composite membrane only needs to exist somewhere inside of the fuel cartridge housing but it does not matter where the

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membrane is located nor does it matter what orientation the membrane takes with relationship to any structure of the fuel cartridge housing. So therefore the membrane can be present (i.e. reside) over and covering the entire opening for the fuel egress port, which is the only opening recited in the claim, and by residing over and covering the entire opening the fuel cartridge will not be capable of releasing the methanol fuel because as defined by the claim the membrane has a methanol-impermeable coating.

The Board of Patent Appeals recently issued a precedential decision regarding an Examiner's duty of determining ambiguity of the claim recitations in *Ex parte Miyazaki* 89 USPQ2d 1207 (BPAI 2008), part of the analysis is recited below:

[ 1. ] This rule of reading claims narrowly in view of ambiguity runs counter to the USPTO's broader standard for claim construction during prosecution. In particular, unlike in post-issuance claim construction, the USPTO gives pending claims "their broadest reasonable interpretation consistent with the specification" and "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 [20 USPQ2d 1827] (Fed. Cir. 2004). This broader claim construction standard is justified because, during prosecution, the applicant has the opportunity to amend the claims, and the Federal Circuit has held that an applicant has the opportunity and the obligation to define his or her invention precisely during proceedings before the USPTO. See *In re Morris*, 127 F.3d 1048, 1056-57 [44 USPQ2d 1023] (Fed. Cir. 1997) (35 U.S.C. 112, second paragraph, places the burden of precise claim drafting on the applicant); *In re Zletz*, 893 F.2d 319, 322 [13 USPQ2d 1320] (Fed. Cir. 1989) (manner of claim interpretation that is used by courts in litigation is not the manner of claim interpretation that is applicable during prosecution of a pending application before the USPTO).

As set forth in the MPEP:

USPTO personnel are to give claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55 [44 USPQ2d 1023] (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim should not be read into the claim. *E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369 [67 USPQ2d 1947] (Fed. Cir. 2003) (claims must be interpreted "in view of the specification" without importing limitations from the specification into the claims unnecessarily). *In re Prater*, 415 F.2d 1393, 1404-05 [162 USPQ 541] (CCPA 1969). See also *In re Zletz*, 893 F.2d 319, 321-22 [13 USPQ2d 1320] (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow.... The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.... An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.").

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MPEP §2106 (II) (Parallel citations omitted). As such, we employ a lower threshold of ambiguity when reviewing a pending claim for indefiniteness than those used by post-issuance reviewing courts. In particular, rather than requiring that the claims are insolubly ambiguous, we hold that if a claim is amenable to two or more plausible claim constructions, the USPTO is justified in requiring the applicant to more precisely define the metes and bounds of the claimed invention by holding the claim unpatentable under 35 U.S.C. §112, second paragraph, as indefinite.

The USPTO, as the sole agency vested with the authority to grant exclusionary rights to inventors for patentable inventions, has a duty to guard the public against patents of ambiguous and vague scope. Such patents exact a cost on society due to their ambiguity that is not commensurate with the benefit that the public gains from disclosure of the invention. The USPTO is justified in using a lower threshold showing of ambiguity to support a finding of indefiniteness under 35 U.S.C. §112, second paragraph, because the applicant has an opportunity and a duty to amend the claims during prosecution to more clearly and precisely define the metes and bounds of the claimed invention and to more clearly and precisely put the public on notice of the scope of the patent.

As stated by the Board of Patent Appeals in the above decision a different threshold of ambiguity should be applied when reviewing pending claims for indefiniteness, specifically if a pending claim is amenable to two or more plausible claim constructions then the USPSO is justified in requiring applicant (currently appellant) to more precisely define the metes and bounds of the claimed invention by rejecting the claims as being indefinite under 35 U.S.C. 112, second paragraph. As in the instant case, claim 11 is amenable to at least two if not more plausible claim constructions, one of said claim constructions as clarified above can read on an inoperable embodiment and therefore claim 11 and any claim that depends on claim 11 is indefinite for not precisely defining the metes and bounds of the claimed invention. And as such the Examiner has properly rejected claims 11-23 under 35 U.S.C. 112, second paragraph for being indefinite and failing to properly define the metes and bounds of the claimed invention.

Regarding the rejection of claims 11-23 under 35 U.S.C. 112, first paragraph, the Examiner does not dispute whether or not a skilled artisan can read the instant specification to make and/or use the instant invention. And as such the specification has not been objected to. It is in fact the claims that have been rejected because as described above as currently recited the claims can read on at least one embodiment that is inoperable if not more. The inoperable embodiment(s) such as discussed above are in fact not enabled by the supporting disclosure. In determining whether or not the claims are enabled by the disclosure certain factors are used under In Re Wands (MPEP 216401.(a)). In the instant case at least the first two tests of In re Wands apply, "The breadth of the claims" and "The nature of the invention". As already discussed above the breadth of the claims encompasses at least one embodiment if not more that is inoperable. Regarding the nature of the invention, it is the nature of the invention to dispense methanol out of the fuel cartridge, if as discussed above the methanol impermeable membrane resides over and covers the entire opening of the fuel egress port then the cartridge is incapable of dispensing methanol which therefore goes against the nature of the invention. Therefore the Examiner has properly rejected claims 11-23 as lacking proper enabling support from the supporting disclosure.

Regarding claims 24 and 26 as being anticipated and/or unpatentable over Kaschemekat, appellants' arguments are not commensurate with the scope of the claims. Appellants argue functional limitations that are not even recited in the above listed claims. Claim 24 is a product claim that is a membrane having three layers. The Examiner has clearly addressed the structure of the product and has made a prima

facie case showing that the materials disclosed by Kaschemekat in fact meet the limitations as recited in claim 24. The Examiner has requested on several occasions that appellants provide evidence in the form of data to show that the materials listed in the Kaschemekat reference are in fact permeable to methanol, to date applicants have provided no evidence and have only argued that none of the layers are methanol impermeable. See for example the last full sentence of the first paragraph of the grounds of rejection reiterated herein: "It is further submitted that due to the breadth of the recitation in claims 32 and 33 of "polymer/inorganic composite" or "other methanol-impermeable material" at least polysilicone-carbonate copolymers and fluoroelastomers fall within said genus' as well as other listed materials found in the Markush group in column 10 of Kaschemekat and the burden is shifted to applicants to prove in the form of evidence otherwise." Permeability of materials with specific chemicals is a property of said material and the burden has been properly shifted to appellants to prove in the form of evidence otherwise, said burden has not been met. Appellants further state that Kaschemekat teaches four layers, it should be noted that Appellants have chosen to use open claim language and therefore more can be present in the prior art and still read on the claims as recited. Regarding claim 25, claim 25 recites only functional limitations and it is submitted that the materials as discussed in the grounds of rejection as well as above is capable of performing the functional limitations of claim 25, especially given the fact that Appellants have failed to provide any evidence to the contrary that the materials recited in Kaschemekat are not methanol impermeable. Regarding claim 27, the "gaps" can be found in the porous substrate (i.e. web) of

Kaschemekat as discussed in the grounds of rejection above, the remainder of claim 27 also contains functional recitations which as already discussed, appellants have not met their burden to show that the prior art cannot function as recited in the claims. Claims 28-30, 32 and 33 have been specifically addressed in the grounds of rejection above, reiterated herein: "It is submitted that due to the breadth of the recitation in claims 28 and 33 of "other analogous polymers or composites", the polyester support web falls within said genus and the burden is shifted to applicants to prove in the form of evidence otherwise. It is also submitted that due to the breadth of the recitation in claims 29 and 33 of "polyurethanes" and "polymeric composition and composites" the asymmetric Loeb-Sourirajan type membrane falls within said genus and the burden is shifted to applicants to prove in the form of evidence otherwise. It is further submitted that due to the breadth of the recitation in claims 32 and 33 of "polymer/inorganic composite" or "other methanol-impermeable material" at least polysilicone-carbonate copolymers and fluoroelastomers fall within said genus' as well as other listed materials found in the Markush group in column 10 of Kaschemekat and the burden is shifted to applicants to prove in the form of evidence otherwise." Regarding the obviousness statement, it is still the position of the Examiner that because Kaschemekat clearly teaches that the different materials are chosen based on their selectivity, a skilled artisan would understand to pick the materials that would be appropriate for the application at hand. Therefore as discussed above claims 24-30, 32 and 33 are properly rejected under 35 U.S.C. 102(b) as being anticipated by or in the alternative under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,069,793. With regards to claim

31, appellants state that for the reason regarding claim 24 at least claim 31 is patentable. However as clarified above Kaschemekat does not contain the supposed deficiencies and the combination of references Kaschemekat with Wohlstadter is a proper combination and claim 31 is unpatentable in view of the combination as provided in the grounds of rejection above.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Robert Hodge/

Examiner, Art Unit 1795

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